Subject Index to Volume 22

Abstracts, The American Society for Clinical Nutrition Ninth Annual Meeting, 667

Acid-ash content

food, hospital diets, 786

Adipose tissue: see also Fat; Fatty acids; Obesity chemical composition, various age levels, 829 fatty acid composition, Polynesians, 594

coronary heart disease, Hawaii, 1504

Ahrens, Edward H.

recipient, McCollum Award, 1415

Alcoholism

rate ethanol metabolism, liver disease, 1608

Amino acids: see also Nitrogen; Nitrogen balance; Protein; individual amino acids

albumin synthesis, low protein diet, rat, 1559 composition, dry whole egg powder, 1190

current concepts, intestinal transport, 292

essential, absorption rate, 327

fortification of cereals, 4

nitrogen balances with leucine, valine, 21

oral gelatin tolerance test, 292

ratio, essential to nonessential, Babinga pygmies,

requirements, young women, 1190

serine metabolism, respiration pattern analysis, 842 serum fasting, postprandial patterns, formula diets,

sulfur containing, interrelationships in plasma, 33 supplementation, bread, 38

utilization, casein-lactalbumin, wheat gluten, 851 valine absorption, obese patients, pre- and poststarvation, 871

Anemia: see also Iron; Iron therapy

children, hypoplasia bone marrow, 504

etiology, Egypt, 498

etiology, iron deficiency, children, 504

hypoalbuminemia, 504

hypochromic in kwashiorkor, 1634

iron, ascorbic acid deficiencies, Yugoslavia, 1531

iron deficiency, Egypt, 1215, 1371

iron deficiency, incidence, pregnancy, 512, 1354

iron deficiency, iron requirements in pregnancy,

iron, folate deficiency, kwashiorkor, 1634 malabsorption, essential nutrients, 498

megaloblastic erythropoiesis, bone marrow morphology, 755

megaloblastic, serum folate activity, ascorbic acid, pregnant Nigerian women, 642

mortality rate, infection, kwashiorkor, 1634

normochromic, hematological and biochemical findings, 1142

protein deficiency, kwashiorkor, 1634

serum folate, vitamin B12 concentration, pregnancy, Nigeria, 755

possible future role of members, 1411

purposes and aims, 1411

ASCN, 1969 Annual Meeting

abstracts, 667

program, 665

Ascorbic acid active transport, guinea pig, 318

daily supplement for clinical scurvy prevention, 535 minimal requirements, 549

passive transport, rat, hamster, 318

radiometric assays, 535, 549

rates of depletion, repletion, 549

serum folate activity, megaloblastic anemia, 642 variation in absorptive activity, 318

Atherosclerosis

low incidence, Polynesians, 594

Australia

nutritional status, aboriginal children, 716

Bacteroides

bile acid metabolism, 284

Rifidobacteria

bile acid metabolism, 284

Bile acids

absorption, small and large intestine transport, 273 fat absorption, 273

intestinal bacterial overgrowth, Clostridia, 284, 327 intestinal bacterial overgrowth, Streptococcus faecalis, 284

metabolism, intestinal hypomotility, stagnant-loop syndrome, 284

physicochemical features, 273

Bile salts

deficiency, 327

fat absorption, 266, 284, 327

Bladder stone disease

changes in urine composition, Thailand, 218

infants, Thailand, 218

orthophosphate oral administration, nonfat dry milk, infants, Thailand, 218

phosphate, calcium, magnesium excretions, 218

normal zinc levels in plasma, serum, 1290

zinc, 1222

Blood lipids

fatty acid composition Polynesians, 594

Blood, plasma

amino acids, albumin synthesis, low protein diet, rat, 1559

amino acid levels, obesity, 740

cholesteryl esters, fatty acids, fasting diabetic children, 1552

diurnal fluctuations, tryptophan, time-, contentcontrolled diets, 1563

fasting amino acids, wheat diet, 1459

indicator folate levels, body fluids, tissues, 1469

ratio, essential to total amino acids, protein adequacy, infants, 1459

zinc concentrations, pregnancy, 726

Blood, serum

amino acid patterns, Babinga pygmies, 1652 amino acids, fasting, postprandial, formula diets,

cholesterol levels, unsaturated dietary fat, Netherlands, 1521

direct- and indirect-reacting copper, 887

enzyme levels, young adults, 701 lipids, lipoproteins, fatty liver in kwashiorkor, 568 low cholesterol levels, Polynesians, 594

potassium, kwashiorkor, Iran, 139 uric acid suppression, allopurinol, 1426

vitamin B₁₂ activity, pregnancy, 1354 Body density

subcutaneous fat, skin-fold measurements, Canada,

Body sweat

regional and total composition, controlled diets, energy expenditure, 52

calcium absorption, osteoporosis, 771 hypoplasia, children, 504 vitamin A deficiency, resorption abnormalities, 975

Calcium: see also Bone

absorption as input-output function, 376 absorption, mechanism of regulation, hen, 391 absorption, osteoporosis, 771 absorption, tracer studies, diet, 771

absorption, variations during laying cycle, hen, 391 excess, ultimobranchial tumors, bull, 115

high endogenous output, vitamin D-resistant rickets, 448

serum cholesterol changes, fecal fatty acids, 1161 serum levels, 381

sodium fluoride intake, phosphorus balance, 381 vitamin D-induced binding protein, 431

zinc balance, phytate, 1304 zinc metabolism, 1315

Canada

body density, subcutaneous fat, 1175 protein intake, self-selected diets, elderly, 1618

Carbohydrate metabolism disaccharidase activity, 99 Celiac disease

absorption, medium-chain triglycerides, 327 diet, gluten-free, 327

increased incidence malignancy, 327

Centers of Nutritional Excellence

Department of Nutrition and Food Science. Massachusetts Institute of Technology, 817 Graduate School of Nutrition, Cornell University, simil

Wils

anal

diet

disc

inte

mol

step

Crear

fatt

tota Crear

cor

Fo

D.

11

a

b

Die

Cycla

Coron

Central African Republic

protein nutrition status, Babinga pygmies, 1652 Cereals

amino acid fortification, 4, 38

infant allergy, Rowe elimination diets, 103

lysine-supplemented wheat, 606 wheat substitutes, allergy, 103

lactose intolerance, Peru, 577 metabolic studies for protein quality, Peru, 577 nutritional status survey, preschool, Mississippi,

obesity, boys, girls, 836

obesity, Lange skin-fold caliper, 836

physiology of nutrition studies, Surinam, 519

fish-protein concentrate, acceptability, preschool children, 878

Cholesterol

coronary heart disease, diet, serum levels, Nether-

intake, coronary heart disease, Hawaii, 1483

Cholesterol, serum

calcium, dietary, 1161

correlation with serum triglycerides, age, sex, 133 hyperlipidemia, 710

Chorionic gonadotropin

nature, effectiveness in obesity, 686

Clostridia

bile acid metabolism, 284

Comments in Biochemistry

Classification of reactive hypoglycemia, 646

Copper metabolism, 887

Glucose 6-phosphatase: A multifunctional enzyme,

Regulation of fatty acid synthesis, 200

The initiation of protein synthesis, 806

Comments in Gastroenterology

Diet and disaccharidases, 99

Hookworm disease, malabsorption, malnutrition. 813

What is dietary fat?, 651

Whither bovine milk?, 214

Congenital heart disease

evaporative heat losses, calorie intake, infants, 1435 skin and lung water losses, urinary, total nitrogen losses, growth failure, 1435

Copper

functions, metabolic pathways, 887

Science, v. 817

iversity, 1652

, 577 issippi,

q

eschool lether-

133

yme,

tion,

435 ogen similarity, inverse relationship with vitamin A, 1017

Wilson's disease, 887 Coronary heart disease

analyses, ecological factors, risk status, Hawaii, 1483, 1504 diet. 8

discriminant function analyses, nutrients, 1483,

interracial differences, 1483

mortality rate, Hawaiian, Japanese males, 1483 stepwise multiple regression analyses, nutrients, age, stress, 1483, 1504

Cream: see also Cream substitutes fatty acid composition, 458

total lipid content, 458 Cream substitutes

composition, 458

Cyclamates: see also Nonsweetening agents Food and Nutrition Board, National Academy of

Sciences, interim report extract, 229 accepted daily intakes, 229 adverse effects, 229 excretion patterns, 229 patterns of consumption, 229 recommendations, 229

studies on cyclohexylamine, animal, 229 recent studies, 4

Dehydration

clinical and biochemical characteristics, Iranian children, 139

unfavorable prognosis factors, 139 Diet: see also Food; other Diet headings adequate, low tryptophan, meal spacing, 1563 basic low calcium, fat supplements, 1161 casein-lactalbumin test, college women, 851 cereal, zinc supplementation, Egypt, 1215 changing food patterns, Hawaii, 1483, 1504 controlled calcium and phosphorus intake, 381 controlled, regional and total body sweat composi-

tion, 52 coronary heart disease, 8 coronary heart disease, Hawaii, 1483, 1504 crystalline cholesterol, 710 energy intake, children, adolescents, 1383 experimental, ascorbic acid-free formula, 535 fasting, vitamin B6 requirements, 10 food supplements, vegetable protein mixture, 531 gluten-free, celiac disease, 327 high protein, low fat, kwashiorkor, 568 hypocaloric, alcohol-containing, fluid loss, 119 liver glycogen disease, children, 617

low calcium, fluorosis, 1407 low carotene, 858 low nitrogen, 1190 low phenylalanine, phenylketonuria, 1568 low potassium, uremia, 490

low protein, purine-free, 1426

lysine-enriched wheat flour, infants, 1459 metabolic hazards of fasting, 1142

mineral deficiency, 531 phytate content, wheat, 1279

regulation, intestinal enzymes, 99

self-selected, protein intake, elderly Canadians,

triglyceride supplement and fat balance, 14 vitamin B₆ depletion, 1429

wheat gluten test, college women, 851 wheat starch and sucrose, 701 zinc deficient, ruminants, 1323

Diet, allergy

children, elimination, management, 103

Diet, fad

"Drinking Man's Diet," 119

Diet, hospital

acid-ash content, 786

nutritional adequacy, regular and bland, 1536 unrestricted, acceptability, gastrointestinal disorders, 1536

Diet, low protein

magnesium, nitrogen utilization, 367

Dietary Management and Therapy

Dietary treatment in duodenal ulcer, 1536 Dietetic management of uremic patients, 490

Northern urbanization and food consumption patterns of southern-born Negroes, 1667

Nutritional and dietary management of food allergy in children, 103

Dietetic products

cereal and milk substitutes, 103

Disaccharide deficiency

classification, disaccharide intolerance, 181, 250 clinical symptoms, 181, 250

Dry skim milk

fortification with vitamin A, 588

Legador

iodized oil therapy, goiter, 1597

Editorials

Chorionic gonadotropin and obesity?, Albrink M. J., 681

Dietary calcium, ultimobranchial tumors and osteopetrosis in the bull. Syndrome of calcitonin excess?, Krook, L., L. Lutwak and K. McEntee, 115

Fluoridation-Issue or obsession?, Bronner, F.,

Fluoridation: The unpopular controversy, Rubini, M. E., 1343

Folate depletion in old age, Girdwood, R. H., 234 Mineral nutrition and the problem of filled or synthetic milks, Bronner, F., 113

Editorials-Continued

Nutrition research in developing nations, Halsted, J. A., 823

One remedy for malnutrition, Brock, J. F., 233

"Protein-calorie dystrophy": A new terminological concept, Ogbeide, M., 1

Resting level of physical activity in obese females Greenfield, N. S., and C. H. Fellner, 1418

Egypt

anemia, etiology, 498

anemia of kwashiorkor, protein, iron, folic acid deficiencies, 1371

growth, maturation, zinc and iron supplementation, 59

parasitism, pellagra, intestinal absorption, 744

Electrolytes

absorption, 315, 327

El Salvador

nutrition survey, 1119

Energy

comparison of respirometer-telemetry techniques, 696

intake, body size, stage of development, children, adolescents, 1383

intake, well-nourished children, adolescents, 1383 weight loss during work, 52

Enzymes: see also specific enzymes

glucose 6-phosphatase, 1204

regulation by diet, jejeunal biopsy, 99 serum levels, young adults, 701

Escherichia coli

alkaline phosphatase, 1222

Ethiopia

nutritional status, physical work capacity, young adults, children, 471

Ethyl alcohol

fatty liver, hyperlipemia, hemolytic anemia, rat, 356

fragment of fat breakdown, 119

Fasting

biochemical findings, 1142

metabolic hazards, 1142

vitamin B6 deficiency, 10

Fat, dietary: see also Obesity; Adipose tissue; Lipids fatty acid composition, chylomicron cholesterol, phospholipids, 79

lipid composition, 651

nitrogen balance, medium- and long-chain triglyceride-supplemented diet, 14

unsaturated, serum cholesterol levels, Netherlands, 1521

variations in triglyceride absorption rate, 279 Fatty acids: see also individual fatty acids

fecal excretion, calcium-fat diets, 1161

regulation of synthesis, 200

Filled milk

definition, Federal Act, 168

nutrient content, 113

palatability, 163

physiological implications, 168

Fish protein concentrate

acceptability, preschool children, Chile, 878 acceptability, tolerance, Moroccan infants, 1571

Glucos

Glucos

phos

enzy

Glucos

obes

hyp

iodi

iodi

nev

Grow

ina

pre

pro

ret

zin

 H_a

CO

he

ire

DO

F

re

ir

ju

Hy

Hui

Hur

Head

Hen

Glyco

Goiter

Fluoridation

biological aspects, 1407

caries prevention, 1340, 1346

community characteristics, alienation theory, 1397 controversy in science, politics, 1397

drinking water, 1340, 1343, 1346, 1397, 1407

Resolution 39, International Society for Research on Civilization Diseases and Vital Substances,

Fluoride

air, uptake in plants, fertilizers, 1407 food, 1340

Fluorosis

low calcium diet, 1407

radiological, histological observations, 1407

therapy, prophylaxis, 1407

Folate depletion

megaloblastic anemia in elderly, United Kingdom, 234

Folic acid

absorption, polyglutamates, intestinal resection, 124

assimilation food folate, 352

binding by milk, 156

binding by serum, milk, 447

deficiency, abruptio placentae, 1354

dietary, absorption and malabsorption, 327

serum folate activity, vitamin B₁₂ concentration, anemic pregnant women, Nigeria, 755

urinary forminoglutamic acid test, 1354

Folinic acid

binding by milk, 156

Food

changing patterns, socioeconomic aspects, Yugoslavia, 1531

corn meal-soy flour-dried skim milk (CSM), 1362

cottonseed flour, 577

fluoride content, 1340

low cost supplements, 527

lysine-enriched wheat flour, 1459

lysine-supplemented wheat, 606

phytate content, wheat diet, 1215, 1279

protein supplements, 527

traditional, contemporary meal patterns, Negroes, 1667

vegetables, sodium, potassium content, 490

Food, allergy

children, nutritional and dietary management, 103 toxicity of milk, 214

Geophagia

znc deficiency, dwarfs, 1279

s, 1571

ry, 1397

07

Research istances.

ngdom,

section.

ration.

Yugo-

. 1362

groes,

t, 103

Glucose metabolism phosphorylation, 1204 Glucose 6-phosphatase enzymic capabilities, 1204 metabolism, 1204 Glucose tolerance obesity, potassium therapy, 1589 Glycogen storage disease hyperlipemia in children, 617 Goiter iodine deficiency, Iran, 1584 iodized oil therapy, Ecuador, Peru, 1597 new causal factor, Egypt, 1547

prevalence, etiology, Iraq, 1660

Growth inadequate calorie intake, nutrients for heat production, 1435 preschool children, India, 606 protein efficiency ratio, rats, 1304 retardation, 1215, 1279 zinc supplementation, boys, Iran, 1279

coronary heart disease, 1483, 1504

Head Start Program heights, weights, Navajo children, 1362 Hemoglobin

iron tagged, 327 porphyrin, 1290 Hunger

Field Foundation Report, 480 report, Citizens Board of Inquiry, 480 Hunger USA Report

implications for health professionals, 1411 justification for the document, 1547 malnutrition, need for objective appraisal, 1547

Hypochromotricia hair zinc levels, contamination sources, 1349 Hypoglycemia

reactive, classification, 646 reactive, hormonal-deficiency states, 646

India lysine-supplemented wheat, growth, preschool children, 606 vitamin A massive dose therapy, children, 858

Infant feeding fish protein concentrate, Morocco, 1571 formula, carbohydrate-free base, added carbohydrate, 845

formulas, alpha-tocopherol, polyunsaturated fatty acid content, 147 formulas, composition, 1150 lysine-enriched wheat flour, 1459

milk-free formulas, 1150 recommended minimum vitamin, mineral levels, 1150

Insulin

intestinal sugar absorption, animals, 311 International Nutrition

Human nutrition research in Yugoslavia, 1531 Nutritional research in South Africa, 527

Nutrition survey of two Rural Puerto Rican areas before and after a Community Improvement Program, 1639

Studies of bladder stone disease in Thailand, 218 Studies on physiology of nutrition in Surinam, 519 Intestinal absorption

electrolyte transport, 327

folic acid, 327

indicators as markers for studies, 327 vitamin B₁₂, 327

Intestine

colonic absorption, electrolytes, water, 315

histochemical observations, disaccharide detection, metaplasia, 327

mucosa, histology, rat, 327

sodium-coupled sugar transport, insulin, 311 sugar absorption, insulin, animals, 311 transport, electrolytes, amino acids, sugars, 660

water absorption, 315, 327 Intestine, acidity regulation

electrolyte balance, renal net acid excretion, ashtotal acidity determinations, 786

Intestine, small

absorption, d-xylose, parasitism, pellagra, Egypt,

absorption, endocrine glands, 305

absorption, glandular-hormone endocrine secretion, animal, 305, 327

digestive-absorptive function, 242 insulin-sugar absorption, rat, 311

synthesis of cholesterol, 327

Iodine deficiency goiter, Iran, 1584

goiter, Iraq, 1660

Iodized oil

goiter therapy, Ecuador, Peru, 1597

dehydration, malnourished children, 139 goiter, iodine deficiency, 1584 zinc nutrition, pregnancy, 726

goiter prevalence, iodine deficiency, 1660

Iron: see also Anemia

absorption, Addisonian pernicious anemia, hydrochloric acid, 1555

absorption, gastric juice, chelates, 327 absorption, iron-tagged hemoglobin, 327

absorption, pancreatic-secretion deficiency, 327 balance in anemic adults, 512

Iron therapy

growth, maturation, Egypt, 59

Kidney

uremia, extraction of potassium from foods, 490 uremia, low potassium diet, 490 uremia, restricted nitrogen intake, 1190

Kwashiorkor

anemia, clinical, hematologic findings, morphology, Egypt, 1371

diet, iron dextran, 1371

reduced synthesis of low density lipoproteins, 568 serum B₁₂, serum vitamin E, folate, Egypt, 1371 serum lipids, lipoproteins, albumin levels before and during treatment, 568 vitamin A deficiency, 1098

Lactase deficiency

congenital, acquired, 181, 250 ethnic and racial differences, 327 prevalence in healthy adults, 181, 250 prolonged lactose feeding, Thailand, 638 Lactobacillus casei serum folic acid assay, 642

Lactose

intolerance, 181, 250

intolerance, Colombian Indians, 122

Letters to the Editor

Amino acid fortification and the protein problem. Gounelle, H., 4

Extracts of Resolution 39 of the International Society for Research on Civilization Diseases and Vital Substances on "The Fluoridation of Drinking Water," Schweigart, H. A., 1340

Folic acid binding by serum and milk, Metz, J., R. Zalusky and V. Herbert, 447

Goiter in Egypt, Greenwald, I., 1547

Growing scientific opposition to fluoridation, Burgstahler, A. W., 1340

Hunger USA 1968 Report, Gershoff, S. N., 1547 Hunger USA 1968 Report, Halsted, J. A., 1547

Nonnutritive sweetening agents, Taylor, C., 4 Protein-calorie malnutrition: Need for an internationally accepted definition, Jelliffe, D. B., 1157

Rebuttal to Editorial "Nutritionists in Public Health," Mita, T. J., 1157

Sodium cyclamate, protein-bound iodine, monkeys, Wills, J. H., 1547

The ingredients of vegetable protein mixture, Matoth, Y., 531

Trace mineral deficiency in low protein-high carbohydrate diets, Hodson, A. Z., 531

Value of determining the cost of amino acid fortification, Rosenfield, D., 828

Leucine

nitrogen balance, 21 Lipid absorption

¹⁴C-labeled bile salts, 327

Lipid metabolism

bile salts, rate of absorption, 266

chylomicrons, 257

electron microscopy, 257

passive diffusion, 257

morphological aspects, absorption, 257 sequential phases of digestion-absorption, 242, 327 Third International Symposium, 654

variations, triglyceride absorption rate, 279

Lipids

blood, fatty acid composition, Polynesians, 594 calorie intake, dietary fat, Polynesians, 594 lipoproteins, albumin levels before and during treatment of kwashiorkor, 568

serum cholesterol changes, calcium, diet, 1161

Lipoproteins

qualitative composition, 617

Liver

hepatic damage, rate ethanol metabolism, alcoholism, 1608

economic value of enrichment, 1459

low nitrogen diet, 1190

serum albumin levels as indicators of protein intake, 1459

weight gain, nitrogen retention, stability of serum albumin, 1459 wheat-flour enrichment, infants, 1459

wheat supplementation, growth, children, 606

Magnesium

nitrogen utilization, low protein diet, 367 Malabsorption: see also Tropical sprue

bile salts, 327

gastric function defects, 327

Giardia lamblia, 327

helminthic infections, blood loss, 498

hookworm disease, 813

intestinal mucosa lesions, 327

lymphoma, geographic, hereditary linked, 327 pancreatic insufficiency, 327

steatorrhea, 327

xylose test, 327

Malnutrition: see also specific types aboriginal children, Australia, 716

etiologic factors, 813

food supplementation as short-term solution, 233

hookworm disease, 813

Hunger USA 1968 Report, 480, 1157, 1547 malabsorption, 813

Marasmus

battered-child syndrome, 1362 definition, 1

zinc levels, 1304

McCollum Award

Ahrens, Edward H., 1415

Milk:

abne adec anei dete

Fille fort hun hun

ma mit nut ord pal the

Milk mu pa ph Min

> Min fil Mis n

CO

gr

Mo fi Mu P

Ni

Milk: see also Filled milk; Synthetic milk; Simulated milk; Milk substitutes

abnormal reactions, 191

adequacy, trace minerals, 196

anemia, iron deficiency, early childhood, 504

determination, orotic acid, dry powdered milk, 532 Filled Milk Act, 163, 168

fortification of dry skim milk with vitamin A, 588 human, essential amino acid content, 1459

human, protein quality, 577

marketing, 163

242, 327

504

61

during

, alco-

ein in-

serum

06

233

mineral nutrition, 113

nutrient analysis, 168

orotic acid content, bovine, 532

palatability of filled milk, milk substitutes, 163

therapeutic uses, 191

Milk substitutes

nutrient content, 168

palatability, 163

physiological implications, 168

Mineral: see also specific mineral

copper metabolism, 887

growth, and maturation response to zinc and iron supplementation, 59

Mineral nutrition

filled, synthetic milk, 113

Mississippi

nutritional status of preschool children, 1444

Morocco

fish protein concentrate, infants' diet, 1571

Mueller, J. F.

Presidential address, 1411

Netherlands

coronary heart disease, unsaturated dietary fat, serum cholesterol, 1521

Nigeria

serum folate activity, vitamin B₁₂ concentration, anemic pregnant women, 755

Nitrogen: see also Nitrogen balance; Protein; Amino acids; individual amino acids

dietary proteins, lysine-enriched wheat flour, infants, 1459

retention from isocaloric, isonitrogenous diets, 1459 Nitrogen balance: see also Amino acids; Nitrogen;

Protein; specific compounds casein-lactalbumin, wheat gluten test diets, 851

fat, medium- and long-chain tryglyceride-supplemented diet, 14

studies in convalescent malnourished children, 577 tolerance levels, leucine, valine, 21

various lysine intakes, college women, 1190

Nonnutritive sweetening agents: see also Cyclamates recent studies, 4

Note from the Editor

Rubini, M. E., 229

Nutrition

centralized establishment, research, training, service, 1411

continuous evaluation, status, 1543

development as science, future, training, 87

human research programs, ecological factors, Yugoslavia, 1531

improvement in protein quality, quantity, 828 need for national nutrition policy, 1543

research in developing nations, 823

role of food processors, 1157

socioeconomic implications, 1444

supplementation, economics, 828 White House Conference, December, 1969

Nutrition education

Department of Nutrition and Food Science, Massachusetts Institute of Technology, 817

Graduate program in Public Health Nutrition, Tulane University School of Public Health and Tropical Medicine, 896

Graduate School of Nutrition, Cornell University, 1211

Nutrition News

Eighth International Congress of Nutrition, 821

Fifth International Congress of Dietetics, 821

Fifty-second Annual Meeting of the American Dietetic Association, 821

Fourteenth Annual Conference on Nutrition and Metabolism, 1156

Graduate program in Public Health Nutrition, Tulane University School of Public Health and Tropical Medicine, 896

Medical Research Grants and Fellowships, 896, 1156

Michael G. Wohl Lectureship, 528

Norman Jolliffe Award, 112

Symposium on carbohydrate metabolism, 896

Nutrition status

aboriginal children, Australia, 716

physical work capacity, young adults, children, Ethiopia, 471

Nutrition survey

Central America and Panama, 1119

dietary, clinical, biochemical comparison survey, Puerto Rico, 1639

El Salvador, 1119

Interdepartmental Committee on Nutrition for National Defense, Jordan study, 1106

Northern Eskimo infants and children, 612 preschool children, Mississippi, 1444 preschool children, South Carolina, 1129

Obesity: see also Adipose tissue; Fat, dietary chorionic gonadotropin, 681, 686

diet, mercurial diuretics, triiodothyronine, response to epinephrine, 1420 Obesity—(Continued)

glucose tolerance test, potassium therapy, 1389 metabolic hazards of fasting, 1142

pituitary-gonadal axis, prolonged starvation, 767 plasma amino acid levels, 740

pregnancy, 686

resting motor activity, 1418

water excretion, plasma free fatty acids, 1420

Overnutrition

Canada, 1175

Panama

nutrition survey, 1119

Pancreas

exocrine function, pancreozymin, secretin hypoproteinemia, 1476

Pernicious anemia

oral iron absorption, gastric juice factor, 1555

Perspectives in Nutrition

A critical reappraisal of "acid-base" balance, 786

Anemia associated with kwashiorkor, 1634 A new need: The nutrition programmer, 893

Disaccharidase deficiency, 181

Modification of cow's milk for infant formulas: current practices, 1150

Social science views of a controversy in science and politics, 1397

Phenylalanine

diurnal variations in serum, phenylketonuria, children, 1568

Phospholipid metabolism

vitamin A deficiency, rat, 27

Phospholipids, plasma

variability in normal adults, 5

Plasma proteins

binding, cyclamates, 229

Polynesians

fatty acid composition, adipose tissue, blood lipids, 594

Porphyria

classification of porphyrin, production, 1290

Potassium

content, vegetables, 490

therapy, obesity, glucose tolerance test, 1589

Presidential Address

J. F. Mueller: The Conscience of a Scientific Society, 1411

Protein: see also Amino acids; Nitrogen; Nitrogen balance; specific compounds

biological evaluation methods, 1304

biological quality, enriched foods, 878

deficiency, anemia in kwashiorkor, 1634

dietary, children, 577

fish-protein concentrate, sunflower presscake meal, 878

human milk, caloric value, 577

index, nitrogen retention, 577

infant and child feeding, 878

initiation of synthesis, reactions, 806

metabolic studies, cottonseed flour, children, Peru, 577

nutritional status, Babinga pygmies, 1652 serum, electrophoretic pattern, 1129

sources for human consumption, 878

supplementation, bread, 38 vitamin A deficiency, 1119

zinc supplementation, plant-seed diet, rat, 1304

Protein-calorie dystrophy: see also Protein-calorie malnutrition.

new concepts in terminology, 1

Protein-calorie malnutrition

blood keto acids, 1139

dermatosis, prognosis, children, 863

enzymatic changes, pancreatic secretion, steatorrhea, 1476

exocrine pancreatic function, adults, 1476 hair zinc levels, Andean Indian children, 1349

hepatic function disturbances, 588

hypochromotricia, kwashiorkor, 1349

kwashiorkor, anemia, Egypt, 1371

mortality rate, clinical signs, Arab children, 863 need for internationally accepted definition, 1157 nutritional anemias of early childhood, 504

preschool Navajo Indian children, 1362

role of infection, 1362

serum B₁₂ and folate concentrations, 504

vitamin A deficiency, 588

xerophthalmia, 1106

Protein malnutrition

disaccharide malabsorption, 300

histological changes, atrophy, intestinal mucosa,

morphological, functional activity, small intestine

Protein nutrition

adequacy, nitrogen excretion, elderly Canadians, 1618

Puerto Rico

Nutrition survey, 1639

Reports of Meetings

International Society for Fluoride Research, 2nd Annual Conference, 1407

Summary of symposium on intestinal transport of electrolytes, amino acids and sugars, 660

Third International Symposium on Drugs Affecting Lipid Metabolism, 654

Rickets

vitamin D resistant, 448

Scury

clinical observations, 535

coagulation studies, scorbutic guinea pig, 1423

experimental, in man, 535

labile factor depression, guinea pig, 1423

met ocul Sexua zinc zinc Simul

nut

Skin pho Skin-f

Sodiu con Sodiu

> Sodiu cale Sodiu sea

Speci Wł Speci

Ch

Fill Hu Nu

Pre

Steat

Strepe bil Sucr int Sunf

Suri

Sym C. C

M

Peru,

04 alorie

cator-

363 157

icosa,

stine

lians

2nd

ffect-

3

metabolism of ascorbic-1-14C acid, 549

ocular lesions, 559 Sexual development

zinc, 1215

zinc supplementation, boys, Iran, 1279

Simulated milk

nutrient content, stability of hydrogenated oils, 168 Skin

photoallergic reaction, cyclamate and saccharine use, 229

Skin-fold measurements

internationally accepted sites, 1175

Sodium

content, vegetables, 490

Sodium cyclamate protein-bound iodine, erythrosin, monkeys, 1547 Sodium fluoride

calcium absorption and balances, 381

Sodium-potassium mixtures

seasoning, therapeutic adjunct, food processing, 464

Special Announcement

White House Conference on Food, Nutrition and Health, December, 1969, 1543

Special Articles

Chorionic gonadotropin in obesity; further clinical observations, 686

Filled milk and artificial milk substitutes, 163 Hunger USA 1968, 480

Nutrition: Where are we? Where are we going?, 87

Protein nutrition in aged individuals on self-selected diets, Canada, 1618

Steatorrhea

control, medium-chain triglycerides, 651

protein-calorie malnutrition, enzymatic changes, pancreatic secretion, 1476

Streptococcus faecalis

bile acid metabolism, 284

Sucrose

intolerance, congenital, acquired, 181, 250

Sunflower presscake meal

protein source, acceptability, preschool children, Chile, 878

Surinam

nutrition, development, muscular, skeletal, adipose tissues of children, 519

Symposia

Calcium absorption, 375-446

Current concepts in intestinal absorption and malabsorption, 239-351

Metabolic function of vitamin A 903-1138

Session I, 911-939

Session II, 943-968

Session III, 975-1091

Session IV, 1095-1138

Nutritional anemias, 495-517

Zinc metabolism 1215-1339

Symposium summary

Intestinal transport of electrolytes, amino acids, sugars, 660

Synthetic milk

nutrient content, 113

Thailand

lactase deficiency, 638

studies of bladder stone disease, infants, 218

Thiamin

therapy in extraocular palsy, Wernicke's encephalopathy, 44

Trace elements

enzyme activities in tissues, pig, 628

Tropical sprue

folic acid dosage for hematologic response, 733 folic acid malabsorption, 733

Tryptophan

diurnal fluctuations in plasma, 1563 low nitrogen diet, 1190

Urbanization

changing food consumption patterns, Negroes, 1667

socioeconomic aspects, changing food habits, Yugoslavia, 1531

Uremia: see Kidney

Uric acid

allopurinol, ribonucleic acid, purine-free diet, 1426

Urine

excretion of nitrogen, creatinine, 549

 V_{aline}

absorption, obese patients, pre- and poststarvation, 871

nitrogen balance, 21

Veillanella

bile acid metabolism, 284

Vitamin A

absorption, contrasting features of cholesterol, 923 absorption, dietary fat, 588

absorption, infants, children, 588

absorption, retinol, retinyl esters, rats, 923

absorption, transport, chicks, 913

binding to nuclear membranes, 1091

biological activity of analogues, 953 biosynthesis from β -carotene, 963

biosynthesis, ribonucleic acid, animal, 1048, 1089

carotenoids, 967

cell differentiation, 1081

coenzyme role, 1003, 1019

deficiency, bone resorption abnormalities, 975

deficiency, cerebrospinal fluid pressure, calves, 1070

deficiency, degeneration mucus-secreting membranes, keratinization, 1059 Vitamin A-(Continued)

deficiency, depressed biochemical systems, rats,

deficiency, metabolism sulfated mucopolysaccharides, rat, 986

deficiency, mortality, 1135

deficiency, pathological changes, rat, 1086

deficiency, phospholipid metabolism, 27

deficiency, protein, transport impairment, 1133

deficiency, structure, function of membranes, simple lipid systems, 1020

deficiency, toxicity, oxidative phosphorylation, rats, 1014

derivatives, development of chick embryo, 1063 electron transfer, 1033

enzyme activity, 975

factors affecting absorption, transport, storage, animal, 934, 966

hormonal biosynthesis, 991

hypervitaminosis, animals, 1045, 1070, 1085

hypervitaminosis, cerebrospinal fluid pressure, calves, 1070

hypovitaminosis

acute febrile infectious disease, 1098 epidemiology of xerophthalmia, 1098, 1106

extent, significance, 1135 ICNND reports on nutrition surveys, 1106

kwashiorkor, 1135

reasons for neglect of xerophthalmia, 1135

infectious diseases, 588 inhibition of carcinogenesis, hamster, 1088

interaction of retinol with biological membranes, 1020, 1033, 1047

in vivo, in vitro administered doses, membranes, 1020

liver specimen studies, storage, 938

liver storage retinyl esters, 939

membrane permeability, epilepsy, sight loss, 1134 metabolic pathways, retinoic acid and retinol, 945 metabolism, formation, excretion of glucuronides, animal, 953

metabolism, synthesis, rabbits, 953

need for standardized methodology, procedure for measurement, active compounds, 936

nitrate, nitrite influence on utilization, chick, 913 pathological conditions, low reserves, 1095 phenolsulfotransferase in the developing rat, 978 progesterone action in deficiency, rat, 991

protein synthesis in mucous membranes, 1059 research progress, 1960-1968, 903

retinol transport in plasma, 911

seasonal fluctuations, serum, 1133

serum, carotene, protein levels, preschool children, South Carolina, 1129

similarity, inverse relationship with copper, 1017 single massive oral dose, control and depleted children, India, 858

storage and release, animal liver, 913, 966 sulfurylase assays, rats, 1003 taste changes, 943

Vitamin B₆

alkaline phosphatase activity, 1197

dependency syndromes, 794

Down's syndrome, 1197

leukocytes, 1197 metabolism, 1197

pyridoxine-responsive anemia, 794

requirements in starving obese males, 10

serial EEG tracings, nerve-conduction studies, depletion, 1429

subclinical central nervous system changes, depletion, 1429

Vitamin B₁₂

absorption, 327

absorption, intestinal resection, 124

blind-loop syndrome, 327

malabsorption, 284

Vitamin C: see Ascorbic acid

Vitamin D

absorption, derivatives, rat, 425

absorption, metabolism of irradiated 7-dehydrocholesterol, 437

binding to nuclear membrane, 1091

biochemical, physiological changes, 396

calcium-binding protein, intestinal mucosa, 431 25-hydroxycholecalciferol, isolation, identification,

subcellular location, 412 hypervitaminosis in squirrel and Cebus monkeys,

initiation, physiological responses, 396

lag in action, 396

net, fractional absorption, urinary excretion, 448 possible effects on protein and ribonucleic acid synthesis, 396

Vitamin E

nutrient content evaluation, milk, milk products, simulated or imitation milk, 147

Vitamins

content, red blood cells, transport across red cell membrane, 1469

distribution in body fluid, 1469

turnover in malnourished subjects, 1469

urinary recovery following intravenous injection,

Water

absorption from intestine, 315, 327

excretion, plasma free fatty acids, obesity, 1420

fluoridation, 1340, 1343, 1346, 1397, 1407

iodine content, thyroid enlargement, Iran, 1584 skin and lung losses, congenital heart disease, 1435 Weight loss

hypocaloric diet, alcohol, 119

Yugos huma

Line absor bindi

calcit carbo carbo chara chela

conte cytor defic defic defic

defic defic defic defi

defic

defic

Yugoslavia

human nutrition research, 1531

Zine

idies.

eple-

dro-

tion, keys,

8 acid

ucts,

cell

ion,

435

absorption, tissue distribution, ruminants, 1323

binding of phytate, 1304, 1315

calcium, chelating agents, 1315

carbohydrate, lipid metabolism, rat, 1240

carbonic anhydrase, acid base homeostasis, 1222

characteristics of metalloenzymes, metal enzyme complexes, 1222

chelating agents, 1222, 1290

content, organ tissues, 1304

cytochrome c synthesis, plant, 1264

deficiency, amino acids, chelating agents, 1268

deficiency, clinical observations, rats and ruminants, 1240, 1323, 1332

deficiency, Egypt, 1215

deficiency, etiology, 1215

deficiency, geophagia, 1279

deficiency, geophagia, 1279 deficiency, hookworm infestation, 1215

deficiency, physiological signs, rat, 1332

deficiency, pig, 628

deficiency, porphyric symptoms, 1290

deficiency, pregnancy, 1215

deficiency, pregnant rat, 1332

deficiency, skeletal, skin lesions, chick, swine, 1268 endogenous excretion, homeostatic control, rumi-

nants, 1323

enzymic action, rats, 1250

fetal content, deficient mothers, rats, 1332

growth retardation, 1215, 1222

hypochromotricia, kwashiorkor, 1349

levels in kwashiorkor, marasmus, 1304

low concentrations, clinical signs, 1215, 1222, 1290

metabolism, 1215, 1222

normal blood plasma, serum levels, 1290

nutrition, socioeconomic, geographical factors,

Iran, 726

pancreatic carboxypeptidase, 1240

phytate utilization, 1279, 1304

porphyria, urine excretion, 1290

primary site of action, 1215

protein source, utilization, 1304

reagent grade zinc sulfate supplementation, growth,

sexual development, Egypt, 59

supplementation, boys, Iran, 1279

synthesis of polynucleotides, 1240

Author Index to Volume 22

Abdel Moneim, M., 59 Abdou, I. A., 59 Abdulnabi, M., 1660 Abel, M., 1483, 1504 Acevedo, G., 577, 1459 Adams, E. B., 1634 Adams, T. H., 396 Adriaenssens, L., 458 Albrink, M. J., 681 Albutt, E. C., 1552 Al-Hindawi, A., 1660 Allan, N. C., 755 Alleyne, G. A. O., 1139 Alperin, J. B., 1354 Alzate, H., 122 Ames, S. R., 934, 939 Anderson, J. T., 1161 Anderson, J. W., 646, 1589 Anderson, O. R., 1020 Anderson, P. R., 638 Andleman, R. J., 794 Andrews, B. F., 845 Areskog, N.-H., 471 Armstrong, W. M., 660 Arroyave, G., 1119 Ascarelli, I., 913 Asenjo, C. F., 1639 Atta, A., 59 Avioli, L. V., 437 Azevedo, M., 588

Baertl, J. M., 577, 1349 Baker, E. M., 535, 549 Baker, G. L., 612, 829 Baker, H., 44, 124, 1469 Ballester, D., 878 Balsley, M., 168 Bar, A., 391 Baraona, E., 356 Barja, I., 878 Bassett, D. R., 1483, 1504 Bayless, T. M., 181, 250 Beamer, K. C., 27 Becker, W. H., 133 Begum, A., 606, 858 Bell, N. H., 425 Berg, A. D., 893 Berger, S., 936 Bhamarapravathi, N., 638 Bhattacharyya, A. K., 1161 Bieri, J. G., 1086 Blair, R., 1383

Block, W. D., 33 Boddy, K., 1555 Bolanos, O., 14 Bortz, W. M., 119 Bowering, J., 1426 Bradfield, R. B., 696, 1349 Braucher, P. F., 851 Bray, G. A., 1420 Brink, M. F., 168 Brock, J. F., 233, 527, 1559 Bronner, F., 113, 376, 448, 1346 Brown, P. T., 851 Brush, M. K., 318, 1190 Bryan, P., 425 Buchman, E., 1536 Bunce, G. E., 588 Burgos, J. C., 1639 Burgstahler, A. W., 1340

Calloway, D. H., 52, 1426, 1577 Camien, M. N., 786 Carroll, J., 978 Carter, J. P., 59, 1362, 1371 Carulli, N., 1608 Cassidy, C. E., 1420 Cavalli-Sforza, L. L., 1652 Chance, G. W., 1552 Cheifetz, P., 1420 Chesters, J. K., 1240 Chiba, N., 1048 Chichester, C. O., 878 Christakis, G., 133 Christopher, N. L., 181 Clark, H. E., 21 Clark, S. B., 279 Clarke, R. P., 851 Coburn, S. P., 1197 Cohn, R. M., 1204 Cole, M., 44 Conrad, M. E., 1423 Cook, L. N., 845 Corbin, C. B., 836 Cordano, A., 577, 1459 Costa, F., 52 Crane, R. K., 242 Czochanska, Z., 594

DaCosta, F., 1618 Dalderup, L. M., 1521 Dalgarno, A. C., 1240 Darby, W. J., 59, 498 Davis, J. T., 59

Dawson, V. T., 851 DeLuca, H. F., 412, 945 De Luca, L., 1059 Demarchi, M., 1660 Den Hartog, C., 1521 Dennis, L. H., 1423 Desplanques, D., 991 De Vries, J. E., 1521 Dhanamitta, S., 218 Dietschy, J. M., 273 Dingle, J. T., 1047 Dobbins, W., III, 257 Donoso, G., 139, 878 Doornbos, R., 1521 Dowdy, R. P., 887 Drenick, E. J., 10, 740 Drury, E. E., 147

Eaton, H. D., 1070 Ebel, J. G., 431 Elliott, R. B., 716 Emami, A., 1584

Falor, W. H., 79 Farid, Z., 498 Farrish, G. C. M., 871 Federspiel, C., 1362 Feeney, M. C., 103 Feingold, S., 124, 1469 Fell, H. B., 975 Fellner, C. H., 1418 Ferber, E., 1531 Fernandes, J., 617 Fernández, N. A., 1639 Fierro-Benitez, R., 1597 Figueira, F., 588 Finch, C. A., 512 Finegan, A., 8 Fisher, H., 1190 Fleming, A. F., 642, 755 Floch, M. H., 214, 239, 327, 813 Fowler, J., 381 Fox, M. R. S., 1279 Fradera, J., 733 Frank, O., 44, 124, 1469 Frank, R. L., 464 Frimpter, G. W., 794 Frith, L., 1559 Fromm, D., 311 - Fruehan, G. J., 696

Gandhi, P. C., 1476

1682

Gangu

Ha

Hay

Hee

He

Her

He

He

Hil

Hie Hie

Ho

Ganguly, J., 923 Garcia, F. G., 358 Garn, S. M., 1279 Garry, P. J., 1444 Garvey, M. B., 1423 Gawam, Z., 1584 Gelb, A. M., 305 George, P. K., 1476 George, W. F., 794 Gershoff, S. N., 1547 Gerson, C. D., 305 Gharib, M., 139 Ghavam, Z., 139 Ghitis, J., 156 Girdwood, R. H., 234 Glennon, J. A., 1420 Goldie, J. H., 710 Gonick, H. C., 786 Gonik, A., 1571 González, H., 122 Goodman, D. S., 911, 963 Gounelle, H., 4 Grabow, J. D., 1429 Graham, G. G., 577, 1459 Grande, F., 1161 Grangaud, R., 991 Gray, S. J., 871 Greenfield, N. S., 1418 Greenwald, I., 1547 Griminger, P., 1190 Grivetti, L. E., 59 Grossowicz, N., 156 Guindi, S., 1371 Gusman, H. A., 686 Güttler, F., 1568 Guzmán, J., 122

Haggard, M. E., 1354 Hall, B. D., 448 Halsted, C. H., 755, 1371 Halsted, J. A., 823, 1279, 1371 Hamedi, P., 1584 Hansen, J. D. L., 568 Hardy, M. H., 1085 Harp, A., 1279 Harper, A. E., 87 Haussler, M. R., 396 Hayes, K. C., 1081 Hedayat, H., 139, 1584 Hegsted, D. M., 358 Herbert, V., 447 Herman, R. H., 99, 200, 646, 806, 1204, 1589 Herskovic, T., 300 Herting, D. C., 147 Hibberd, K. A., 396 Hickey, N., 8 High, E. G., 1129

Hodges, R. E., 535, 549, 559

Hodson, A. Z., 531 Hockstra, W. G., 1268 Holmes, W. L., 119, 654 Holt, P. R., 279 Hood, J., 535, 549, 559 Horta, E., 733 Horwitz, J. P., 628 Hove, E. L., 1014 Howat, P., 119 Howe, J. M., 21 Huang, S., 250 Hunt, R. D., 358 Hunt, S. M., 367 Huntzicker, P. B., 696 Hurley, L. S., 1332 Hurwitz, S., 391 Hussein, M. A., 1563 Hyman, H., III, 14

Iber, F. L., 1608 Irwin, M. I., 701 Ishi, K., 1175 Israel, H., 1279

Jansen, G. R., 38 Jelliffe, D. B., 1157 Jerome, N. W., 1667 Jesudian, G., 606 Johnson, B. C., 1048 Jones, G., 1175

Kaneko, M., 1175 Kater, R. M. H., 1608 Kattab, A. K., 1371 Kaung, D., 1536 Keller, G. H. M., 1521 Kelman, L., 1559 Kennedy, M., 1048 Kent, J. R., 767 Keusch, G. T., 638 Kevany, J., 1597 Keys, A., 1161 Keyser, D. E., 851 Kfoury, G. A., 726, 1250 Khorvash, P., 726 Kinsell, L. W., 79 Kinsella, J. E., 532 Kirsch, R. E., 1559 Knapp, R. N., 1536 Kolski, S., 21 Kram, K. M., 1444 Krause, R. F., 27 Kretchmar, A. L., 842 Kritchevsky, D., 654 Krook, L., 115

Lawlor, T., 1142 Lawrence, C., 27 Lee, Y. L., 79 Leevy, C. M., 44 Leveille, G. A., 642 Levinson, F. J., 893 Levitan, R., 315 Lewin, I., 381 Lieber, C. S., 356 Linkswiler, H., 1429 Little, J. A., 710 Loshkajian, H., 863 Lucy, J. A., 1033 Luecke, R. W., 628 Lui, N. S. T., 1020 Lutwak, L., 115, 771 Luyken, R., 519 Luyken-Koning, F. W. M., 519

Maccioni, A., 878 MacLeod, C., 1211 MacMillan, D. R., 448 Maldonado, N., 733 Mandelbaum-Shavit, F., 156 Mansour, A., 59 March, S. C., 535, 549 Margen, S., 52, 1426, 1577 Markovs, M. E., 33 Matoth, Y., 531 Maurer, B., 8 Maxwell, G. M., 716 McEntee, K., 115 McGanity, W. J., 1354 McLaren, D. S., 863, 1133, 1135 Meister, L., 767 Mendiola, L. R., 1264 Mendonça, S., 588 Merrow, S. B., 851 Metz, J., 447 Mickelsen, O., 464 Miller, E. R., 628 Miller, W. J., 1323 Mills, C. F., 1240 Mita, T. J., 1157 Mitchell, G. E., Jr., 966 Mitchell, G. V., 1014 Moe, P. G., 1279 Moellering, R. C., Jr., 1483, 1504 Mönckeberg, F., 878 Monsen, E. R., 458 Montalvo, J. M., 1444 Moore, T., 1017, 1095 Moorhouse, J. A., 1618 Morales, E., 577, 1459 Morse, E. H., 851 Morton, R. H., 943 Mourad, K. A. H., 1371 Mousa, W. A., 59 Mueller, J. F., 1411 Mulcahy, R., 8 Murray, E., 1563

Murray, T. K., 938 Myrtle, J. F., 396

Nasiff, S., 59 Nelsen, C. E., 1444 Newcomer, K. L., 1589 Nicol, M., 991 Norman, A. W., 396 Nunn, A. S., Jr., 660 Nye, W. H. R., 5

Oberleas, D., 196, 628, 1304 O'Dell, B. L., 1315 Ogbeide, M. I., 1 Okonkwo, P. O., 532 Olbrecht, A. J., 1175 Olesen, E. S., 1568 Olson, J. A., 953 Oomen, H. A. P. C., 1098 Orbach, A., 133 Owen, G. M., 1150, 1444

Paolucci, A. M., 1652 Parisi, A. F., 1222 Parlow, A. F., 767 Pasternak, C. A., 986 Patwardhan, V. N., 59, 496, 598, 744, 1106, 1371 Pennetti, V., 1652 Pereira, S. M., 606, 858 Pérez-Santiago, E., 733 Pikaar, N. A., 617 Pinter, K. G., 14 Piper, D. W., 191 Pitchumoni, C. S., 813 Pitt, G. A. J., 967, 1045 Placko, R. P., 1459 Pollack, H., 480 Prasad, A. S., 196, 628, 1215, 1304 Pretell, E., 1597 Price, C. A., 1264 Price, E. J., 842 Prinyanont, P., 638

Puyau, F. A., 1435 Quarterman, J., 1240

Prior, I. A. M., 594

Ramachandran, K., 1476 Reinhold, J. G., 726, 1250 Reiser, S., 660 Retief, F. P., 352 Reynolds, J. W., 588 Rhyne, A., 1426 Roberts, A. B., 945 Roberts, L. J., 1383 Roberts, P., 396 Rocha, J., 588 Roels, O. A., 903, 1020 Rogers, W. E., Jr., 1003 Roman, W., 1290 Ronaghy, H., 1279 Rosa, I. R., 1639 Rosenberg, I. H., 284 Rosenblatt, G., 1483, 1504 Rosenfield, D., 828 Rosensweig, N. S., 99, 806 Rubini, M. E., 163, 229, 1343 Rüedi, B., 1420

Sabzevari, M., 1584

Sadre, M., 139 Saffiotti, U., 1088 Sama, S. K., 1476 Samachson, J., 381 Santini, R., 733 Sapolsky, H. M., 1397 Sarkissian, N., 1584 Sarram, M., 726 Sauberlich, H. E., 535, 549 Saunders, S. J., 1559 Scheig, R., 651 Schiff, E. R., 273 Schiling, F. J., 133 Schlierf, C., 79 Schofield, F. A., 367 Schweigart, H. A., 1340 Scrimshaw, N. S., 1563 Scullard, G. H., 1139 Secondi, J., 1362 Seidenberg, M., 1197 Selinus, R., 471 Seward, C. R., 1014 Shadarevian, S., 863 Shah, D. O., 1020 Shahbazi, H., 1584 Shannon, B., 21 Sharman, I. M., 1134 Sheir, S., 744 Shephard, R. J., 1175 Shirajian, E., 863 Shorland, F. B., 594 Simmonds, W. J., 266 Simmons, A., 710 Simmons, D. H., 786 Sourial, N., 744, 1371 Spada, R., 878 Spadoni, M. A., 1652 Speckman, E. W., 168 Spencer, B., 1019 Spencer, H., 381 Spencer, R. P., 292 Stanbury, J. B., 1597 Staton, A. J., 701 Steele, B. F., 33 Steiner, M., 871 Stenhouse, N. S., 755

Stevenson, N. R., 318 Stokes, J., 111, 1483, 1504 Sundararaj, R., 606 Suryanarayana, B. V., 767 Swendseid, M. E., 10, 740

Taj El-Din, H., 1660 Tandon, B. N., 1476 Tavill, F., 1571 Taylor, A. N., 431 Taylor, C., 4 Thavaramara, B., 638 Thera, C., 1161 Thomas, D. B., 986 Thompson, J. N., 1063 Thomson, A. D., 124, 1469 Troncale, F. J., 638 Trout, M. E., 1020 Truswell, A. S., 568 Tsaltsas, T. T., 490 Tucker, R. E., 851 Turner, A., 44

Umezawa, C. Y., 740

Vahlquist, B., 471 Vallee, B. L., 1222 Valyasevi, A., 218 Van Duzen, J., 1362 Van Haard, W. B., 1521 Van Reen, R., 218 Vinyard, E., 10

Wait, B., 1383 Waldbott, G. L., 1407 Wamberg, E., 1568 Wannenberg, P., 568 Wasserman, R. H., 431 Watson, C. E., 568 Weller, L. A., 1577 Wells, D. G., 1142 Wicht, S., 1559 Will, G., 1555 Williams, R. B., 1240 Wills, J. H., 1547 Wogan, G. N., 817 Wolf, G., 1059, 1091 Wolf, P., 628 Wood, P. D., 79 Woodruff, C., 504

Yáñez, E., 878 Yee, T., 1349 Younessi, M., 726 Young, V. R., 1563

Zakim, D., 200, 1204 Zalusky, R., 447 Zile, M., 1089





The American Journal of CLINICAL NUTRITION



OFFICIAL JOURNAL OF The American Society for Clinical Nutrition, Inc.

VOLUME 22 January–December 1969 Copyright © 1969 by The American Society for Clinical Nutrition, Inc.

Requests for any reproduction of copyrighted material should be made in writing to the Executive Editor at 9650 Rockville Pike, Bethesda, Maryland 20014, and should include a statement of intended use and explicit specifications of the material to be reproduced. Gue

Lett

Diet Vita

Fat

Nitr

Vita

Met

Tota

Exti

Gro

Cor

Nut Die

Nut

GI

CONTENTS OF VOLUME 22

No. 1, January 1969

* **
I. Ogbeide
Letters to the Editor: Amino Acid Fortification and the Protein Problem. Nonnutritive
Sweetening Agents
Variability of Plasma Phospholipids in Normal Adults. W. H. R. Nye
Diet and Coronary Heart Disease. Dietary Analysis on Fifty Females. A. FINEGAN,
N. Hickey, B. Maurer and R. Mulcahy
Vitamin B ₆ Requirements in Starving Obese Males. E. J. Drenick, E. Vinyard and
M. E. Swendseid
Fat and Nitrogen Balance with Medium-Chain Triglycerides after Resection. K. G.
PINTER, H. HYMAN III AND O. BOLANOS
Nitrogen Balances of Adults Given Leucine and Valine. S. M. Kolski, B. Shannon,
J. M. Howe and H. E. Clark
Vitamin A Deficiency and Phospholipid Metabolism. F. Krause, K. C. Beamer and
C. Lawrence
Methionine, Cysteine, Cystine, and Taurine Interrelationships in Human Plasma.
W. D. Block, M. F. Markovs and B. F. Steele
Total Protein Value of Protein- and Amino Acid-Supplemented Bread. G. R. Jansen. 38
Extraocular Palsy and Thiamine Therapy in Wernicke's Encephalopathy. M. Cole,
A. TURNER, O. FRANK, H. BAKER AND C. M. LEEVY 44
Regional and Total Body Sweat Composition of Men Fed Controlled Diets. F. Costa,
D. H. Calloway and S. Margen
Growth and Sexual Development of Adolescent Egyptian Village Boys. Effects of Zinc,
Iron, and Placebo Supplements. J. P. Carter, L. E. Grivetti, J. T. Davis,
S. Nasiff, A. Mansour, W. A. Mousa, Alaa-El-Din Atta, V. N. Patward-
HAN, M. ABDEL MONEIM, I. A. ABDOU AND W. J. DARBY
Composition of Human Chyle Chylomicrons following Single Fat Feedings.
C. Schlierf, W. H. Falor, P. D. Wood, YL. Lee and L. W. Kinsell 79
Nutrition: Where Are We? Where Are We Going? A. E. HARPER 87
Diet and Disaccharidases. N. S. Rosensweig and R. H. Herman 99
Nutritional and Dietary Management of Food Allergy in Children. M. C. Feeney 103
Nutrition News

No. 2, February 1969

Guest	Editorial:	Mineral	Nutrition	and	the	Problem	of Filled	or	Synthetic	Milks.	F.	
	BRONNE	ER										113



Guest Editorial: Dietary Calcium, Ultimobranchial Tumors and Osteopetrosis in the Bull. Syndrome of Calcitonin Excess? L. Krook, L. Lutwak and K. Mc-	
	115
ENTEE. Lack of Effect of Alcohol on Rate of Weight Loss on a Hypocaloric Diet. W. M.	
BORTZ, P. HOWAT AND W. L. HOLMES	119
J. Guzmán	122
A. D. THOMSON, S. FEINGOLD AND O. FRANK	124
Serum Cholesterol and Triglyceride. An Epidemiological and Pathogenetic Interpre-	
tation. F. J. Schilling, G. Christakis, A. Orbach and W. H. Becker Dehydration Syndrome in Malnourished Iranian Children. M. Sadre, H. Hedayat,	133
M. Charib, Z. Ghavam and G. Donoso	139
Vitamin E Content of Milk, Milk Products, and Simulated Milks: Relevance to In-	
fant Nutrition. D. C. Herting and E. E. Drury	147
Binding of Folic Acid and Derivatives by Milk. J. GHITIS, F. MANDELBAUM-SHAVIT	
AND N. GROSSOWICZ	156
Special Article: Filled Milk and Artificial Milk Substitutes	
Introduction. M. E. Rubini	163
Nutritional Value of Milk Compared with Filled and Imitation Milks. M. F.	
Brink, M. Balsley and E. W. Speckman	168
Disaccharidase Deficiency. T. M. Bayless and N. L. Christopher	181,
Milk in Treatment of Gastric Disease. D. W. PIPER	191
AND A. S. PRASAD.	196
Regulation of Fatty Acid Synthesis. D. ZAKIM AND R. H. HERMAN	200
Whither Bovine Milk? M. H. Floch.	214
Studies of Bladder Stone Disease in Thailand. X. Effect of Orthophosphate and Non-	
fat Dry Milk Supplementations on Urine Composition. A. Valyasevi, S.	
Dhanamitta and R. Van Reen	218
	- 1
No. 3, March 1969	- 1
The of France 1000	- 1
	- 1
Note from the Editor: More on Cyclamates	229
Guest Editorial: One Remedy for Malnutrition. J. F. Brock	233
Guest Editorial: Folate Depletion in Old Age. R. H. GIRDWOOD	234
Symposium: Current Concepts in Intestinal Absorption and Malabsorption	
Guest Editor: Martin H. Floch	239
Introduction	240
A Perspective of Digestion—Absorption Function. R. K. Crane	242
Inadequate Intestinal Digestion of Lactose. T. M. Bayless and S. S. Huang	250
Morphologic Aspects of Fat Absorption. W. Dobbins III	257
Effect of Bile Salts on the Rate of Fat Absorption. W. J. SIMMONDS	266
Current Concepts of Bile Acid Absorption. E. R. Schiff and J. M. Dietschy	273

Uri

Hy

Ma

	Dietary Trigiyeeride Composition Related to Intestinal Fat Absorption. P. R.	
	HOLT AND S. BENNETT CLARK.	279
115	Influence of Intestinal Bacteria on Bile Acid Metabolism and Fat Absorption.	
	Contributions from Studies of the Blind-Loop Syndrome. I. H. Rosenberg.	284
119	Intestinal Absorption of Amino Acids. Current Concepts. R. P. Spencer	292
	Protein Malnutrition and the Small Intestine. T. Herskovic	300
122	Influence of the Endocrine Glands on Small Intestine Absorption. A. M. Gelb	
	AND C. D. GERSON	305
124	Insulin and Intestinal Sugar Absorption. D. Fromm	311
	Colonic Absorption of Electrolytes and Water. R. Levitan	315
133	Existence and Characteristics of Na-Dependent Active Transport of Ascorbic	
	Acid in the Guinea Pig. N. R. Stevenson and M. K. Brush	318
139	Recent Contributions in Intestinal Absorption and Malabsorption. M. H. Floch.	327
	Urinary Folate Excretion after Ingestion of Pteroylmonoglutamic Acid and Food Folate.	
147	F. P. Retief	352
	Fatty Liver, Hyperlipemia, and Erythrocyte Alterations Produced by Ethanol Feeding	
156	in the Rat. E. Baraona and C. S. Lieber	356
	Hypervitaminosis D in New World Monkeys. R. D. Hunt, F. G. Garcia and D. M.	
163	Hegsted	358
	Magnesium Balance and Protein Intake Level in Human Female. S. M. Hunt and F.	000
168	A. Schofield	367
181,	The Gallerian Control of the Control	001
191		
196		
200	No. 4, April 1969	
214		
	Symposium: Calcium Absorption	
218	Guest Editor: F. Bronner	
	Introduction	376
	Effect of Sodium Fluoride on Calcium Absorption and Balances in Man. H.	
	Spencer, I. Lewin, J. Fowler and J. Samachson	381
	Intestinal Calcium Absorption in the Laying Fowl and Its Importance in Calcium	00.
	Homeostasis. S. Hurwitz and A. Bar	391
	Basic Studies on the Mechanism of Action of Vitamin D. A. W. Norman, M. R.	331
	HAUSSLER, T. H. ADAMS, J. F. MYRTLE, P. ROBERTS AND K. A. HIBBERD	396
229	25-Hydroxycholecalciferol, the Probable Metabolically Active Form of Vitamin D.	390
233	Isolation, Identification, and Subcellular Location. H. F. DeLuga	410
234		412
	Absorption of Vitamin D ₃ Oleate in the Rat. N. H. Bell and P. Bryan	425
239	Vitamin D-Induced Calcium-Binding Protein of Intestinal Mucosa. Relation to	
240	Vitamin D Dose Level and Lag Period. J. G. Ebel, A. N. Taylor and R. H.	40-
242	Wasserman	431
250	Absorption and Metabolism of Vitamin D ₃ in Man. L. V. Avioli	437
257	Letter to the Editor: Folic Acid Binding by Serum and Milk	447
266	Vitamin D-Resistant Rickets and High Fecal Endogenous Calcium Output. A Report	
273	of Two Cases. B. D. Hall, D. R. MacMillan and F. Bronner	448

Fatty Acid Composition and Total Liquid of Cream and Cream Substitutes. E. R.	
Monsen and L. Adriaenssens	458
Sodium-Potassium Chloride Mixtures as Table Salt. R. L. Frank and O. Mickelsen.	464
Physical Work Capacity and Nutritional Status in Ethiopian Male Children and Young	
Adults. NH. Areskog, R. Selinus and B. Vahlquist	471
Hunger USA 1968. A Critical Review. H. Pollack	480
Dietetic Management of Uremic Patients. I. Extraction of Potassium from Foods for	
Uremic Patients. T. T. TSALTAS	490
Symposium: Nutritional Anemias	
Chairman: V. N. Patwardhan	
Introduction	496
Parasitism and Anemia. Z. Farid, V. N. Patwardhan and W. J. Darby	498
Nutritional Anemias in Early Childhood. C. WOODRUFF	504
Iron-Deficiency Anemia. C. A. FINCH	512
Studies on Physiology of Nutrition in Surinam. XII. Nutrition and Development of	
Muscular, Skeletal, and Adipose Tissues in Surinam Children. R. LUYKEN	
AND F. W. M. LUYKEN-KONING	519
Nutritional Research in South Africa. J. F. Brock	527
Nutrition News	528
Program, 9th Annual Meeting, ASCN	529

No. 5, May 1969

Letters to the Editor: Vegetable Protein Mixture. Animal Models and Human	
Protein-Calorie Malnutrition.	531
Orotic Acid in Food Milk Powders. P. O. Okonkwo and J. E. Kinsella,	532
Experimental Scurvy in Man. R. E. Hodges, E. M. Baker, J. Hood, H. E. Sauber-	
LICH AND S. C. MARCH.	535
Metabolism of Ascorbic-1-4C Acid in Experimental Human Scurvy. E. M. BAKER, R.	
E. HODGES, J. HOOD, H. E. SAUBERLICH AND S. C. MARCH.	549
Ocular Lesions in Scurvy. J. Hood and R. E. Hodges	559
Relation of Serum Lipids and Lipoproteins to Fatty Liver in Kwashiorkor. A. S.	
TRUSWELL, J. D. L. HANSEN, C. E. WATSON AND P. WANNENBURG	568
Dietary Protein Quality in Infants and Children. II. Metabolic Studies with Cottonseed	
Flour. G. G. Graham, E. Morales, G. Acevedo, J. M. Baertl and A.	
CORDANO	577
Absorption of Vitamin A by Infants Receiving Fat-Free or Fat-Containing Dried Skim	
Milk Formulas. F. Figueira, S. Mendonça, J. Rocha, M. Azevedo, G. E.	
BUNCE AND J. W. REYNOLDS	588
Studies on Fatty Acid Composition of Adipose Tissue and Blood Lipids of Polynesians.	
F. B. Shorland, Z. Czochanska and I. A. M. Prior	594
Lysine-Supplemented Wheat and Growth of Preschool Children. S. M. PEREIRA, A.	
Begum, G. Jesudian and R. Sundararaj	606
Nutritional Survey of Northern Eskino Infants and Children C. I. Barre	619

Нур

Cha

Lac

Fola

Wh Rep

Sur

Nir

Gu Ch Sin

Di

C

Z

H

F

Volume Contents	vii
Hyperlipemia in Children with Liver Glycogen Disease. J. Fernandes and N. A.	
PIKAAR	617
S. Prasad, D. Oberleas, P. Wolf, J. P. Horwitz, E. R. Miller and R. W. Luecke	628
Lactase Deficiency in Thailand: Effect of Prolonged Lactose Feeding. G. T. KEUSCH, F. J. TRONGALE, B. THAVARAMARA, P. PRINYANONT, P. R. ANDERSON AND N.	con
BHAMARAPRAVATHÍ. Folate Activity and Ascorbic Acid in Serum of Anemic Pregnant Nigerian Women. A.	638
F. Fleming and G. A. Leveille	642 646
What is Dietary Fat? R. Scheig.	651
Reports of Meeting: Third International Symposium on Drugs Affecting Lipid Metabolism	654
Summary of Symposium on Intestinal Transport of Electrolytes, Amino Acids, and	
Sugars Ninth Annual Meeting of The American Society for Clinical Nutrition	660
Program Abstracts	665 667
No. 6, June 1969	
Guest Editorial: Chorionic Gonadotropin and Obesity? M. J. Albrink	681
Chorionic Gonadotropin in Obesity: Further Clinical Observations. H. A. Gusman Simultaneous Comparison of Respirometer and Heart-Rate Telemetry Techniques as Measures of Human Energy Expenditure. R. B. Bradfield, P. B. Hunt-	686
ZICKER AND G. J. FRUEHAN	696
Dietary Wheat Starch and Sucrose: Effect on Levels of Five Enzymes in Blood Serum of Young Adults. M. I. IRWIN AND A. J. STATON	701
Crystalline Cholesterol: Effect on Serum Cholesterol Levels in Patients with Hyper-	
lipidemia. J. H. Goldie, A. Simmons and J. A. Little	710
ELLIOTT Zinc Nutrition in Human Pregnancy in Fars Province, Iran: Significance of Geographic	716
and Socioeconomic Factors. M. SARRAM, M. YOUNESSI, P. KHORVASH, G. A.	EQ.
Keoury and J. G. Reinhold Hematologic Response to Physiologic Doses of Folic Acid in Tropical Sprue. N	726
Maldonado, J. Fradera, R. Santini, E. Horta and E. Pérez-Santiago Plasma Amino Acid Levels in Obese Subjects before, during, and after Starvation. M.	733
E. Swendseid, C. Y. Umezawa and E. Drenick	740
Small Intestinal Structure and Absorption in Egypt: Influence of Parasitism and Pellagra. C. H. Halsted, S. Sheir, N. Sourial and V. N. Patwardhan	744
Folate Activity, Vitamin B ₁₂ Concentration, and Megaloblastic Erythropoiesis in Anemic	777

Pregnant Nigerians. A. F. Fleming, N. C. Allan and N. S. Stenhouse..... 755

Pituitary-Gonadal Axis during Prolonged Total Starvation in Obese Men. B. V.	
SURYANARAYANA, J. R. KENT, L. MEISTER AND A. F. PARLOW	767
Tracer Studies of Intestinal Calcium Absorption in Man. L. LUTWAK	771
A Critical Reappraisal of "Acid-Base" Balance. M. N. CAMIEN, D. H. SIMMONS AND H.	
C. Gonick	786
Vitamin B ₆ Dependency Syndromes: New Horizons in Nutrition. G. W. FRIMPTER, R.	
J. Andleman and W. F. George	794
The Initiation of Protein Synthesis. R. H. HERMAN AND N. S. ROSENSWEIG	806
Hookworm Disease, Malabsorption, and Malnutrition. C. S. PITCHUMONI AND M. H.	
FLOCH	813
Centers of Nutritional Excellence: Department of Nutrition and Food Science, Massa-	
chusetts Institute of Technology, Cambridge, Massachusetts	817
Nutrition News.	821
No. 7, July 1000	
No. 7, July 1969	
Guest Editorial: Nutrition Research in Developing Nations. J. A. HALSTED	823
Letter to the Editor: Fortification of Cereal Grains	828
Human Adipose Tissue Composition and Age. G. L. BAKER	829
Standards of Subcutaneous Fat Applied to Percentile Norms for Elementary School	
Children. C. B. CORBIN	836
Altered Metabolism of Serine in Radiation Chimeras. A. L. Kretchmar and E. J.	
Price	842
Low Birth-Weight Infants Fed a New Carbohydrate-Free Formula with Different	
Sugars. I. Growth and Clinical Course. B. F. Andrews and L. N. Cook	845
Utilization of Amino Acids in Casein-Lactalbumin and Wheat Gluten when Equalized	
to Levels of the FAO Pattern. E. H. Morse, R. E. Tucker, P. F. Braucher,	
V. T. Dawson, D. E. Keyser, S. B. Merrow, R. P. Clarke and P. T. Brown.	851
Prevention of Vitamin A Deficiency. S. M. Pereira and Almas Begum	858
Short-Term Prognosis in Protein-Calorie Malnutrition. D. S. McLaren, E. Shira-	
JIAN, H. LOSHKAJIAN AND S. SHADAREVIAN	863
Intestinal Uptake of Valine in Calorie and Protein Deprivation. M. STEINER, G. C.	
M. FARRISH AND S. J. GRAY	871
Fish-Protein Concentrate and Sunflower Presscake Meal as Protein Sources for Human	
Consumption. E. Yáñez, D. Ballester, A. Maccioni, R. Spada, I. Barja,	
N. Pak, C. O. Chichester, G. Donoso and F. Mönckeberg	878
Copper Metabolism. R. P. Dowdy	887
A New Need: The Nutrition Programmer. A. D. Berg and F. J. Levinson	893
Nutrition News	896
Symposium: The Metabolic Function of Vitamin A	
Chairman: George Wolf	
SESSION I: Absorption, Transport and Storage of Vitamin A	
The Fifth Decade of Vitamin A Research. O. A. ROELS	
Retinol Transport in Human Plasma. D. S. GOODMAN	911

	Volume Contents	ix
	Absorption of Vitamin A. J. GANGULY	923
•	Factors Affecting Absorption Transport, and Storage of Vitamin A. S. R. Ames. Comments. S. Berger. Comments. T. K. Murray. Discussion Summary. S. R. Ames.	934 936 938 939
	SESSION II: Metabolism and the "Active" Form of Vitamin A; the Conversion of Beta-Carotene to Vitamin A	333
	Introduction. R. H. Morton	943
]	Roberts. The Alpha and the Omega of Vitamin A Metabolism. J. A. Olson Biosynthesis of Vitamin A from β-Carotene. D. S. Goodman Discussion:	945 953 963
	Comments. G. E. MITCHELL, JR Discussion Summary. G. A. J. PITT	966 967
	No. 8, August 1969	
C		
	posium: The Metabolic Function of Vitamin A SESSION III:	
	Part I: Vitamin A and Enzymes	
	Introduction. H. B. Fell.	975
	Phenolsulfotransferase in the Developing Rat. J. Carroll	978
	Pasternak and D. B. Thomas Effect of Vitamin A on Enzymic Conversion of the Δ ⁵ -3-β-Hydroxy- into Δ ⁴ -3-Oxo- steroids by Adrenals of the Rat. R. Grangaud, M. Nicol and D. Des-	986
	PLANQUES Reexamination of Enzyme Activities Thought to Show Evidence of a Coenzyme	991
	Role for Vitamin A. W. E. ROGERS, JR.	1003
	Discussion:	
	Some Aspects of Vitamin A Deficiency or Toxicity in Intermediary Metabolism. C. R. SEWARD, G. V. MITCHELL AND E. L. HOVE	1014
	Vitamin A and Copper. T. Moore Discussion Summary. B. Spencer	
	Part II: Vitamin A and Membranes	
	Vitamin A and Membranes. O. A. Roels, O. R. Anderson, N. S. T. Lui, D. O.	1000
	Shah and M. E. Trout	1020
	tron Transfer. J. A. Lucy	1033
	Comments. G. A. J. Pitt	1045
	Discussion Summary. J. T. DINGLE	1047

Vitamin A and Nuclear RNA Synthesis. B. C. Johnson, M. Kennedy and N.	1048
Chiba. Vitamin A and Protein Synthesis in Mucous Membranes. L. De Luca and G.	1046
Wolf	1059
Vitamin A in the Development of the Embryo. J. N. Thompson	1063
Chronic Bovine Hypo- and Hypervitaminosis A and Cerebrospinal Fluid Pressure.	
	1070
Discussion:	
Comments. K. C. Hayes.	1081
	1085
	1086
	1088
	1089
	1091
SESSION IV: Clinical Aspects of Vitamin A Deficiency as Related to Metabolic Function	
Introduction, T. Moore	1095
Clinical Epidemiology of Xerophthalmia in Man. H. A. P. C. Oomen	1098
	1106
Interrelations between Protein and Vitamin A and Metabolism. G. Arroyave	
Some Aspects of Nutritional Vitamin A Levels in Preschool Children of Beaufort	
	1129
Discussion:	
Comments. D. S. McLaren	1133
An Unusual Case of Self-Imposed Vitamin A Deficiency. I. M. SHARMAN	1134
Discussion Summary. D. S. McLaren	1135
	1139
Metabolic Hazards of Fasting. T. LAWLOR AND D. G. WELLS	1142
Modification of Cow's Milk for Infant Formulas: Current Practices. G. M. Owen	1150

No. 9, September 1969

Letters to the Editor: Nutritionists in the New Public Health. Terminology for Protein-Calorie Malnutrition	1157
Dietary Calcium and Fat. Effect on Serum Lipids and Fecal Excretion of Cholesterol	
and Its Degradation Products in Man. A. K. BHATTACHARYYA, C. THERA,	
J. T. Anderson, F. Grande and A. Keys	1161
Factors Affecting Body Density and Thickness of Subcutaneous Fat. Data on 518 Cana-	
dian City Dwellers. R. J. Shephard, G. Jones, K. Ishii, M. Kaneko and A.	
J. Olbrecht	1175
Reassessment of Amino Acid Requirements of Young Women on Low Nitrogen Diets.	
I. Lysine and Tryptophan. H. FISHER, M. K. BRUSH AND P. GRIMINGER	1190
Leukocyte Pyridoxal Phosphate and Alkaline Phosphatase in Down's Syndrome and	
Other Retardates S. P. Coburn and M. Seidenberg	1197

Le Ed

Gi Ha

Fo

Pre

An

Glucose 6-Phosphatase: A Multifunctional Enzyme. R. M. Cohn, R. H. Herman and	
D. Zakim	1204
Centers of Nutritional Excellence: Cornell University, Ithaca, New York	1211
Symposium: Zinc Metabolism	
Guest Editor: A. S. Prasad	
A Century of Research on the Metabolic Role of Zinc. A. S. Prasad	1215
Zinc Metalloenzymes: Characteristics and Significance in Biology and Medicine.	
A. F. Parisi and B. L. Vallee	1222
Metabolic Role of Zinc. C. F. Mills, J. Quarterman, J. K. Chesters, R. B.	
WILLIAMS AND A. C. DALGARNO	1240
Zinc-Dependent Enzymes in Zinc-Depleted Rats: Intestinal Alkaline Phosphatase.	
J. G. Reinhold and G. A. Kfoury	1250
Early Events in the Stimulation by Zinc of Cytochrome c Synthesis in Ustilago. L.	
R. Mendiola and C. A. Price	1264
Skeletal and Skin Lesions of Zinc-Deficient Chickens and Swine. Possible Relation-	
ship to "Connective Tissue Diseases" of Man. W. G. HOEKSTRA	1268

No. 10, October 1969

Symposium: Zinc Metabolism	
Continued from the September issue	
Controlled Zinc Supplementation for Malnourished School Boys: A Pilot Experiment. H. Ronaghy, M. R. Spivey Fox, S. M. Garn, H. Israel, A. Harp,	
P. G. Moe and J. A. Halsted	
Zinc in Porphyria. W. Roman	1290
Growth as Affected by Zinc and Protein Nutrition. D. OBERLEAS AND A. S.	
Prasad	1304
Effect of Dietary Components upon Zinc Availability: A Review with Original	
Data. B. L. O'Dell.	1315
Absorption, Tissue Distribution, Endogenous Excretion, and Homeostatic Control	
of Zinc in Ruminants. W. J. MILLER	1323
Zinc Deficiency in the Developing Rat. L. S. HURLEY	1332
Letters to the Editor: Fluoridation of Drinking Water	1340
Editorial: Fluoridation: The Unpopular Controversy. M. E. RUBINI	1343
Guest Editorial: Fluoridation—Issue or Obsession? F. Bronner	1346
Hair Zinc Levels of Indian Children during Protein-Calorie Malnutrition. R. B.	
Bradfield, T. Yee and J. M. Baertl	1349
Folic Acid, Pregnancy and Abruptio Placentae. J. B. ALPERIN, M. E. HAGGARD AND	
W. J. McGanity	1354
Protein and Calorie Malnutrition among Preschool Navajo Children. J. VAN DUZEN,	
	1362
Anemia of Kwashiorkor in Cairo: Deficiencies of Protein, Iron, and Folic Acid. C. H.	
HALSTED, N. SOURIAL, S. GUINDI, K. ABDEL HADI MOURAD, A. K. KATTAB,	
J. P. Carter and V. N. Patwardhan	1371

	Social Science Views of a Controversy in Science and Politics. H. M. Sapolsky 139	Energy Intake of Well-Nourished Children and Adolescents. B. Wait, R. Blair and	
Social Science Views of a Controversy in Science and Politics. H. M. SAPOLSKY 1397		L. J. Roberts	1383
Report of a Meeting: Riological Action of Fluoride	Report of a Meeting: Biological Action of Fluoride	Social Science Views of a Controversy in Science and Politics. H. M. SAPOLSKY	1397
Report of a Meeting. Biological Action of Fluoride	report of a meeting. Brooklear retion of Frankle	Report of a Meeting: Biological Action of Fluoride	1407

No. 11, November 1969

Presidential Address: The Conscience of a Scientific Society. J. F. Mueller	1411
McCollum Award	
Guest Editorial: Resting Level of Physical Activity in Obese Females. N. S. Green-	
FIELD AND C. H. FELLNER	1418
Triiodothyronine and Mercurial Diuretics. G. A. Bray, J. A. Glennon, B. Rüedi, P.	
Cheifetz and C. E. Cassidy	1420
Labile Factor Depression in Scorbutic Guinea Pigs. M. B. GARVEY, L. H. DENNIS	
AND M. E. CONRAD	1423
Suppression of Uric Acid Formation from Dietary Nucleic Acid with Allopurinol. J.	
BOWERING, S. MARGEN, D. H. CALLOWAY AND A. RHYNE	1426
Electroencephalographic and Nerve-Conduction Studies in Experimental Vitamin B ₆	
Deficiency in Adults. J. D. Grabow and H. Linkswiler	1429
Evaporative Heat Losses of Infants with Congenital Heart Disease. F. A. PUYAU	1435
Nutritional Status of Mississippi Preschool Children. A Pilot Study. G. M. Owen,	
P. J. GARRY, K. M. KRAM, C. E. NELSEN AND J. M. MONTALVO	1444
Lysine Enrichment of Wheat Flour: Evaluation in Infants. G. G. GRAHAM, R. P.	
Placko, G. Acevedo, E. Morales and A. Cordano	1459
Vitamin Distribution in Red Blood Cells, Plasma, and Other Body Fluids. H. BAKER,	
O. Frank, A. D. Thomson and S. Feingold	1469
Exocrine Pancreatic Function in Protein-Calorie Malnutrition Disease of Adults. B. N.	
TANDON, P. K. GEORGE, S. K. SAMA, K. RAMACHANDRAN AND P. C. GANDHI	1476
Coronary Heart Disease in Hawaii: Dietary Intake, Depot Fat, "Stress," Smoking, and	
Energy Balance in Hawaiian and Japanese Men. D. R. BASSETT, M. ABEL,	
R. C. Moellering, Jr., G. Rosenblatt and J. Stokes III	1483
Dietary Intake, Smoking History, Energy Balance, and "Stress" in Relation to Age,	
and to Coronary Heart Disease Risk in Hawaiian and Japanese Men in Hawaii.	
D. R. Bassett, M. Abel, R. C. Moellering, Jr., G. Rosenblatt and J.	
Stokes III	1504
A Practical Method for Decreasing the Serum Cholesterol Level in Man. L. M.	
Dalderup, R. Doornbos, C. den Hartog, W. B. van Haard, J. E. de Vries	
AND G. H. M. KELLER.	
Human Nutritional Research in Yugoslavia. F. Ferber	
Dietary Treatment in Duodenal Ulcer. E. Buchman, D. T. Kaung and R. N. Knapp.	1536
Special Announcement: White House Conference on Food, Nutrition, and Health	1543

L

Fa

Ir

Pl

T

D

U

I

P

xiii

No. 12, December 1969

Letters to the Editor: Goiter in Egypt. Effect of Sodium Cyclamate on Protein-Bound Iodine in Monkeys. Hunger USA 1968 Report	1547
Fasting Plasma Cholesteryl Esters in Diabetic Children Consuming Corn Oil. E. C.	
Albutt and G. W. Chance	1552
Iron Absorption in Addisonian Pernicious Anemia. K. Boddy and G. Will	1555
KIRSCH, S. J. SAUNDERS, L. FRITH, S. WICHT, L. KELMAN AND J. F. BROCK	1559
Tryptophan Intake, Spacing of Meals, and Diurnal Fluctuations of Plasma Tryptophan in Men. V. R. Young, M. A. Hussein, E. Murray and N. S. Scrimshaw	1569
Diurnal Variations of Serum Phenylalanine in Phenylketonuric Children on Low	1563
Phenylalanine Diet. F. GÜTTLER, E. S. OLESEN AND E. WAMBERG	1568
Use of Fish Protein Concentrate in the Diets of Weanling Infants. A Study of 88 Infants from a Low Socioeconomic Population, Casablanca, Morocco. F. TAVILL	
AND A. GONIK	1571
Variation in Fasting and Postprandial Amino Acids of Men Fed Adequate or Protein-	13/1
Free Diets. L. A. Weller, S. Margen and D. H. Calloway	1577
Goiter in Iran. A. Emami, H. Shahbazi, M. Sabzevari, Z. Gawam, N. Sarkissian,	
P. Hamedi and H. Hedayat	
Improvement in Glucose Tolerance of Fasting Obese Patients Given Oral Potassium.	
J. W. Anderson, R. H. Herman and K. L. Newcomer	
Prophylaxis and Treatment of Endemic Goiter with Iodized Oil in Rural Ecuador and	
Peru. J. Kevany, R. Fierro-Benitez, E. A. Pretell and J. B. Stanbury	1597
Differences in the Rate of Ethanol Metabolism in Recently Drinking Alcoholic and Non-	
drinking Subjects. R. M. H. KATER, N. CARULLI AND F. L. IBER	
Protein Nutrition in Aged Individuals on Self-Selected Diets. F. daCosta and J. A.	
Moorhouse	
Anemia Associated with Kwashiorkor. E. B. Adams.	
Nutrition Survey of Two Rural Puerto Rican Areas before and after a Community Improvement Program. N. A. Fernández, J. C. Burgos, C. F. Asenjo and I.	
R. Rosa	
Serum Free Amino Acid Pattern in a Babinga Pygmy Adult Population. A. M.	
Paolucci, M. A. Spadoni, V. Pennetti and L. L. Cavalli-Sforza	
Prevalence and Etiology of Goiter in Iraq. M. Demarchi, A. Al-Hindawi, M.	
ABDULNABI AND H. TAJ EL-DIN.	
Northern Urbanization and Food Consumption Patterns of Southern-Born Negroes.	
N. W. Jerome	1667
Subject Index	1671
Author Index	1682